

VENTILATION

§ 169.625 Compartments containing diesel machinery.

(a) Spaces containing machinery must be fitted with adequate drip-proof ventilators, trunks, louvers, etc., to provide sufficient air for proper operation of the propulsion and auxiliary engines.

(b) Air-cooled propulsion and auxiliary engines installed below deck must be fitted with air intake ducts or piping from the weather deck. The ducts or piping must be arranged and supported to safely sustain stresses induced by weight and engine vibration and to minimize transfer of vibration to the supporting structure. Prior to installing ventilation for the engines, plans or sketches showing the machinery arrangement including air intakes, exhaust stack, method of attachment of ventilation ducts to the engine, location of spark arresting mufflers and capacity of ventilation blowers must be submitted to the OCM for approval.

(c) Spaces containing machinery must be fitted with at least two ducts to furnish natural or mechanical supply and exhaust ventilation. One duct must extend to a point near the bottom of the compartment, and be installed so that the ordinary collection of water in the bilge will not trap the duct. Where forced ventilation is installed, the duct extending to the bottom of the compartment must be the exhaust. The total inlet area and the total outlet area of ventilation ducts must be not less than one square inch for each foot of beam of the vessel. These minimum areas must be increased when such ducts are considered part of the air supply to the engines.

(d) All ducts must be of rigid permanent noncombustible construction, properly fastened, supported, and reasonably gastight from end to end.

(e) All supply ducts for ventilation purposes must be provided with cowls or scoops having a free area not less than twice the required duct area. When the cowls or scoops are screened, the mouth area must be increased to compensate for the area of the screen wire. Dampers are prohibited in supply ducts. Cowls or scoops must be kept open at all times except when weather

would endanger the vessel if the openings were not temporarily closed. Supply and exhaust openings must not be located where the natural flow of air is unduly obstructed, or adjacent to possible sources of vapor ignition, and must not be located where exhaust air may be taken into the supply vents.

§ 169.627 Compartments containing diesel fuel tanks.

Unless they are adequately ventilated, enclosed compartments or spaces containing diesel fuel tanks and no machinery must be provided with a goose-neck vent of not less than 2½ inches in diameter. The vent opening must not be located adjacent to possible sources of vapor ignition.

§ 169.629 Compartments containing gasoline machinery or fuel tanks.

Spaces containing gasoline machinery or fuel tanks must have natural supply and mechanical exhaust ventilation meeting the requirements of American Boat and Yacht Council Standard H-2.5, "Design and Construction; Ventilation of Boats Using Gasoline."

§ 169.631 Separation of machinery and fuel tank spaces from accommodation spaces.

(a) Machinery and fuel tank spaces must be separated from accommodation spaces by watertight or vapor tight bulkheads of double diagonal wood, marine plywood, steel plate, or equivalent construction.

(b) On vessels less than 90 feet in length, segregation may be by means of a watertight or vapor tight engine box.

PIPING SYSTEMS

§ 169.640 General.

(a) Vital piping systems, as defined in § 169.642 of this subpart, must meet the material and pressure design requirements of Subchapter F of this chapter.

(b) Except as provided in this paragraph, nonmetallic piping system materials must meet the applicable requirements of 46 CFR 56.60-25.

(1) Rigid nonmetallic materials are acceptable for use in bilge, ballast, and machinery-connected piping systems on vessels less than 120 feet in length,

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provided that bilge and fire systems do not use the same piping.

(2) Nonmetallic piping is prohibited in fuel systems except where flexible hose is permitted.

(3) Rigid nonmetallic materials may be used in non-vital systems.

§ 169.642 Vital systems.

For the purpose of this part, the following are considered vital systems—

(a) A marine engineering system identified by the OCMI as being crucial to the survival of the vessel or to the protection of the personnel on board; and

(b) On vessels greater than 120 feet in length—

- (1) Bilge system;
- (2) Ballast system;
- (3) Fire protection system;
- (4) Fuel oil system; and
- (5) Steering and steering control system.

BILGE SYSTEMS

§ 169.650 General.

All vessels must be provided with a satisfactory arrangement for draining any compartment, other than small buoyancy compartments, under all practical conditions. Sluice valves are not permitted in watertight bulkheads except as specified in §169.652(a).

§ 169.652 Bilge piping.

(a) All vessels of 26 feet in length and over must be provided with individual bilge lines and suction for each compartment except that the space forward of the collision bulkhead may be serviced by a sluice valve or portable bilge pump if the arrangement of the vessel is such that ordinary leakage can be removed this way.

(b) The bilge pipe on vessels 65 feet in length and under must be not less than one inch nominal pipe size. On vessels greater than 65 but less than 120 feet in length the bilge pipe must be not less than one and one-half inches. Piping on vessels of 120 feet or greater or of 100 gross tons or greater must meet the requirements contained in §56.50-50 of this chapter.

(c) Each bilge suction must be fitted with a suitable strainer having an open

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area not less than three times the area of the bilge pipe.

(d) Each individual bilge suction line must be led to a central control point or manifold. Each line must be provided with a stop valve at the control point or manifold and a check valve at some accessible point in the bilge line, or a stop-check valve located at the control point or manifold.

(e) Each bilge pipe piercing the collision bulkhead must be fitted with a screw-down valve located on the forward side of the collision bulkhead and operable from above the weather deck.

§ 169.654 Bilge pumps.

(a) Vessels of less than 65 feet in length must have a portable hand bilge pump having a maximum capacity of 5 gpm.

(b) In addition to the requirements of paragraph (a) of this section, vessels of 26 feet but less than 40 feet in length must have a fixed hand bilge pump or fixed power bilge pump having a minimum capacity of 10 gpm. If a fixed hand pump is installed, it must be operable from on deck.

(c) In addition to the requirements of paragraph (a) of this section, vessels of 40 feet but less than 65 feet must have a fixed power bilge pump having a minimum capacity of 25 gpm.

(d) Vessels of 65 feet in length but less than 120 feet and under 100 gross tons must have two fixed power bilge pumps having a combined minimum capacity of 50 gpm.

(e) Vessels of 120 feet or greater and vessels of 100 gross tons and over must have two fixed power pumps meeting the capacity requirements of §56.50-55(c) of this chapter.

(f) Each power driven bilge must be self priming.

(g) Each fixed bilge pump required by this section must be permanently connected to the bilge main.

(h) Bilge pumps may also be connected to the firemain provided that the bilge system and firemain system may be operated simultaneously.

ELECTRICAL

§ 169.662 Hazardous locations.

Electrical equipment must not be installed in lockers that are used to store